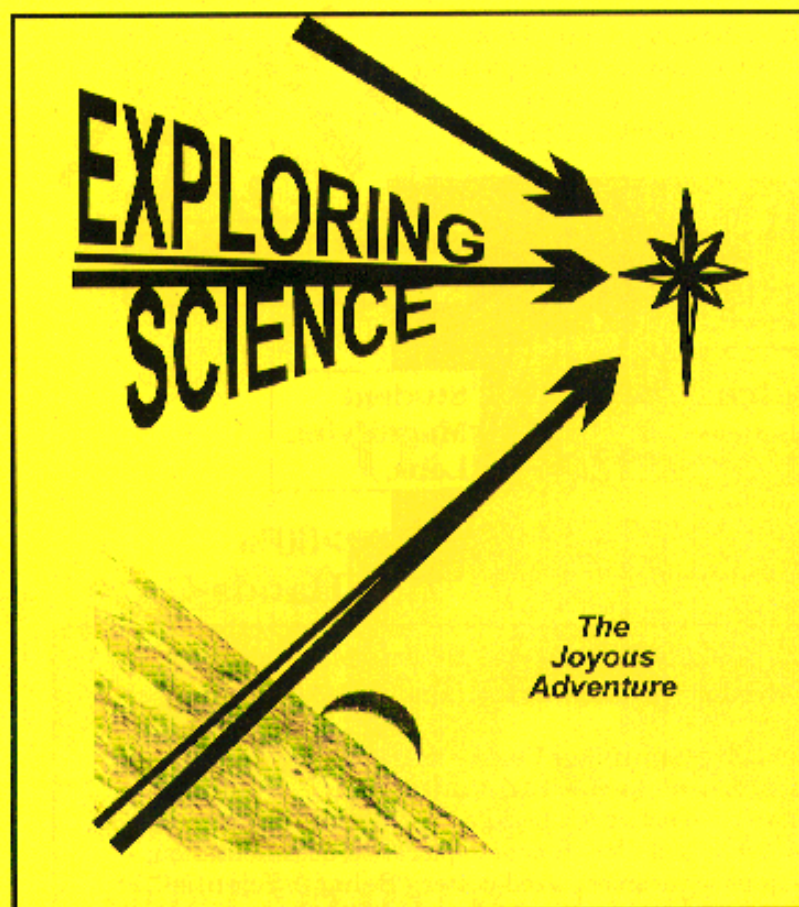
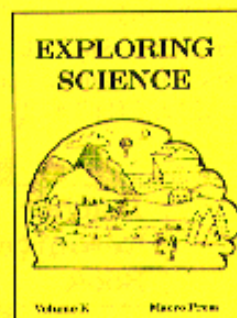


Launch Young K-6 Scientists

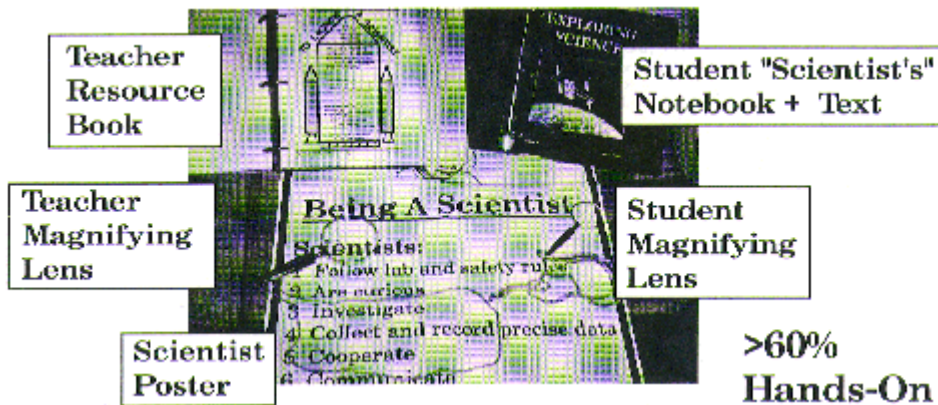
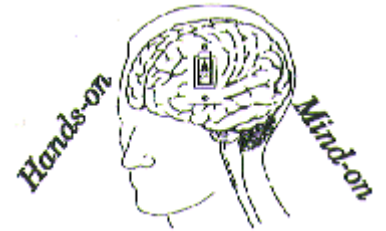


Into The Future
With Hands-on Explorations



EXPLORING SCIENCE

EXPLORING SCIENCE is a ***K-6 hands-on, minds-on*** Project 2061/US Department of Education based complete science program that helps integrate the curriculum. EXPLORING SCIENCE is legally compliant.



FULL PROGRAM (Teacher Resource + all Student Materials above)

For each Student: Text + Binder + 2" Magnifying Lens = \$15.00

Teacher's Resource Book + 3.5" Magnifying Lens = \$120.00

(absolute proration of teacher materials 1:25 students)

(includes over 300 pages of hands-on activities, background information, one copy of the Student Book, and blackline masters for student exploration documentation, teacher in-service materials, plus a classroom sized poster, **Being a Scientist**.)

INDIVIDUAL PROGRAM (1 each of all materials above)

Includes the right to copy student materials for your students.

Teacher's Resource Book + 3.5" Magnifying Lens = \$225

(includes over 300 pages of hands-on activities, background information, one copy of the Student Book, and blackline masters for student exploration documentation, teacher in-service materials, plus a classroom sized poster, **Being A Scientist**.)

Plus One Student Book + Binder + 2" Magnifying Lens



Phone/Fax support by the teacher/authors.

Money Back Guarantee:

18242 Peters Court
Fountain Valley, CA 92708
Phone/FAX (714)964-9191

We believe in our program! If you are not satisfied, return the materials within 30 days in a resalable condition. You will get a full refund!

Money Back Guarantee*

A Program written in the classroom by active teachers that exceeds the Project 2061 implementation.

Color of Vision

Sound of Excitement

Motion of Hands-On

Students Gain:
Success & Confidence
Process Skills
Understanding



Teachers Gain:
Integrated Curriculum
Success for ALL students
Mentor Guidance

Only EXPLORING SCIENCE (K-6) Offers:

1. Thematically linked chapter material
2. Integrated Curriculum
3. Sheltered English Training
4. Greater than 60% hands-on
5. Cooperative Learning Strategies
6. Reading Language Arts Teacher Ready
7. Materials affordable for all students
8. Consumables less than \$2 per student per year
- *9. 30 day MONEY BACK on any returned sellable materials.

Districts Gain:
Budget Protection
Cooperative Learning
Teacher Training



Macro Press
The Active Teacher
Company

Bringing
Science
To
Life®

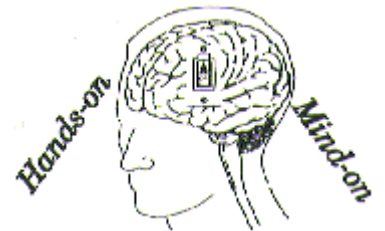
The EXPLORING SCIENCE Program Organization

"Why?" is a wonderful question. Every child, and every scientist, spends most of his/her day asking why. The question is pertinent to instructional material. Why was it written in the manner that it was? The presentation of known facts is vital to the process of developing knowledge and understanding. However, in an era of rapid scientific discovery, teaching science must be more than mere presenting of "facts", even when learned hands-on. The authors feel that the better way is to concentrate on the scientific process, and to teach the students to question, like Einstein, Darwin, and Leonardo da Vinci. Logical, organized problem solving, especially in groups and teams, is valuable to every person, not just those entering scientific fields. This program has as its first goal the teaching of the student to be a scientific problem solver.

Exploring Science is designed to raise a generation of functional, problem solving, and communicative adults. Grade after grade, each chapter helps the child grow in the ability to gain, organize, process, and communicate what she/he has learned, not only in science, but also in all other subjects. The first chapter teaches the students, beginning in kindergarten, how to be a scientist. Following are theme based chapters using the accepted themes of **Energy, Stability, Patterns of Change, Systems and Interactions, Scale and Structure, and Evolution**. The final chapter is devoted to placing the student into an awareness that the scientist does not work outside of his/her society and environment, the History/Social Science tie.

Through hands-on explorations, the students are shown how scientists solve problems, and why they document as they do, by doing actual work and solving interesting problems. The Student Text is never the primary teaching tool. It is used to integrate the learning into the total curriculum by the use of raps, chants, poetry, and questioning. Even the glossary is hands-on in this program. Using National Academic Excellence Award-winning techniques developed in working with non-English speaking students, the authors have created the concept of an Interactive Glossary. Subject areas integrated throughout the program.

Language acquisition
From reading readiness to reading
From math readiness to math
Visual and Performing Arts
History/Social Science
Current Issues/Technology



The skills taught are enhanced as the students go up in the grades commensurate with their maturity. At all levels, the students are expected to explain what they have learned through cooperative learning techniques of Pair-Share, Teams, and Conferencing. Heavily used throughout is the graphic organizer. The students are expected to logically organize all of their material. They keep a Scientist's Notebook every year. This notebook is used exactly like Leonardo da Vinci used his notebook, as a reference of what has been seen, tried, and learned. The students are taught how to relate seemingly unrelated data to create new knowledge.

Physical, earth, and life explorations, thematically linked, are placed in the same chapter to insure that the student does not create artificial separations in his/her mind. The purpose is to generalize the knowledge. Every day all humans are faced with problems that seem unfamiliar. Thematic understanding that helps link previous studies, provides "can do" solutions that work. The ability to unify the unfamiliar with the known provides confidence in students.

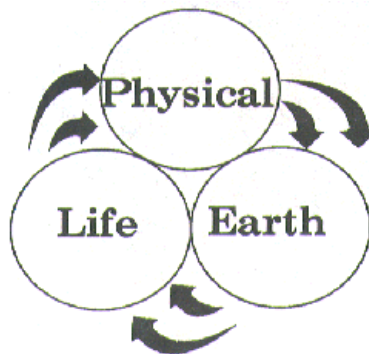
Science Understanding

Facts are not enough. We need to be able to apply them!

Understanding is easier when information is developed actively with hands-on explorations AND is related to other known information. Project 2061, American Association for the Advancement of Science, produced "Science for All Americans", a report defining the rationale for teaching thematically. "Science for All Americans" asked that Physical, Earth, and Life Science be taught at the same time linked by theme to provide true understanding. EXPLORING SCIENCE teaches thematically, but is also includes two additional themes. All grade levels, K-6, start with a theme of Being a Scientist to teach process, problem solving, documentation, and communication. They end with a chapter tied to History/Social Science to show how scientists work within a context.

THEMATICALLY LINKED

Energy
Stability
Evolution



Scale and Structure
Systems and Interactions
Patterns of Change

All Grades Themes. Being A Scientist AND History Social Science			
Grade K:	Scale and Structure Patterns of Change	Grade 4:	Scale and Structure Patterns of Change Energy
Grade 1:	Energy Systems and Interactions Evolution	Grade 5:	Scale and Structure Stability Patterns of Change
Grade 2:	Systems and Interactions Scale and Structure Evolution	Grade 6:	Evolution Energy Systems and Interactions
Grade 3:	Energy Systems and Interaction Stability		

Cooperative/Collaborative Learning is used throughout the program.

STUDENT APPLICATION

"Science is the limitless voyage of joyous exploration."

Walt Whitman

This is a program where hands-on/minds-on explorations are the heart.
The student text supports, adds, and clarifies content.



4th - Testing out the mystery materials



5th - Testing Parallax



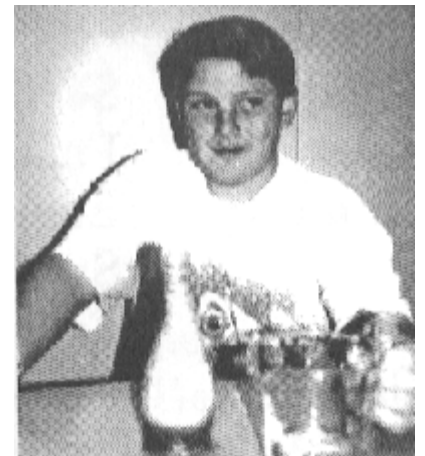
3rd - Discovering the hardness of an egg shell



1st - Using a level



2nd - Observing chemical Change



6th - Preparing a volcano simulation



K - Discovering shadows



Being a Scientist

Scientists:

- 1 Follow lab and safety rules
- 2 Are curious
- 3 Investigate
- 4 Collect & record precise data
- 5 Cooperate
- 6 Communicate
- 7 Seek answers
- 8 Ask new questions
- 9 **PERSIST**

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Name: _____ Date: _____

Scientist: _____

Being A Scientist

Scientists:

- 1 Follow lab and safety rules

Scientist is: _____ I am: _____

- 2 Are curious

- 3 Investigate

- 4 Collect and record precise data

- 5 Cooperate

- 6 Communicate

- 7 Seek Answers

- 8 Ask new questions

- 9 Persist

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How a scientist thinks.



Dr. Elena Gonzalez

"I am a Hispanic woman whose eyes are brown, whose parents had a cook and read a lot of books to school. What is your name?"

You are too many questions! How many people had said that to the little girl with the brown eyes and upturned face?

Elena was born in Mexico in 1943. She went to work when she was very young. She helped her parents grow fruit and vegetables for the women of the big houses. The whole family had to work to make enough money to buy food and clothes. It was hard work for a little girl, and her back hurt.

She was unhappy, but not because of the hard work or her aching back. Elena Gonzalez wanted to go to school, and the work kept her from her dreams.

When Elena was six, her family moved to the United States. "Go America, you're like to money," her father said. "I am going to school! I am going to school!" Elena said every day. She could hardly wait. Elena knew that she would find the answer to her questions at school. When the Gonzalez family got to Texas, they worked for the owner of a huge ranch. Elena was ready to enter school, but she could not. The ranch had no school bus and no driver to take her.

To make up for her disappointment, Elena's father let her see an old geography book he had. She asked so many questions about the maps and pictures that her family decided to send her to the city where she could live with a cousin and go to school.

Elena got to her cousin's home. It had very modern cars. It was not very long. She asked so many questions that her cousin sent her back home. Back home, Elena continued hoping.

When Elena was nine, her father found a job and moved to the city. Elena's dream came true. She started school. She found it hard. She did not speak English very well. She asked all her questions in Spanish. Her teacher also spoke Spanish, but she was busy. "Elena, she said, 'You ask me many questions!' It was some time from school and Elena started a program on the radio, called 'The Quiz Kids.' These children knew the answers to so many questions and Elena learned from all.

In junior high school, Elena found a teacher she liked, a good friend, and teachers who enjoyed her questioning mind. The class she loved was algebra. The friend was Margaret. They read books and went on to high school together. Elena was on the girl's basketball team, she was elected to student council, and she joined the science club.

Elena Gonzalez still worked picking fruit with her family in the spring and summer. Margaret was planning to go to college and her parents were able to pay for her education. Elena wanted to go to college too, but her parents had no money to send her. They wanted their curious daughter to follow her dream, but they were afraid of taxes. Finally they agreed.

Elena studied science in college. She thought she would be a teacher. A professor called her to his desk. "I know your questioning mind. Why do you become a research scientist?" he asked. "Research scientists ask questions about the world we live in and they use their mind and science to find the answers."

Elena studied cell and tissue biology. She became a research scientist and her first job was DR. MARIA GONZALEZ and she works in her own laboratory. She is also a teacher. Do you think she ever gives trouble with the students who ask too many questions? I don't!

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Scientific Thinking Processes:

1. **OBSERVE** things in a precise way.
2. **COMMUNICATE** their ideas so others can understand and expand on them.
3. **COMPARE** what is known against what is not known.
4. **CATEGORIZE** their findings into groups or classes.
5. **RELATE** their findings into cause and effect relationships.
6. **INFER** what can happen based on their previous knowledge and as their knowledge grows.
7. **APPLY** this knowledge to new purposes.

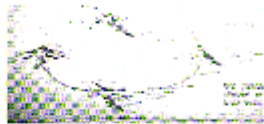
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<p>Name: _____ Date: _____</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center; font-size: small;">I Have New Questions.</td> <td style="width: 85%; height: 50px;"></td> </tr> <tr> <td style="text-align: center; font-size: small;">How I Found Out.</td> <td style="height: 50px;"></td> </tr> <tr> <td style="text-align: center; font-size: small;">What I Found Out.</td> <td style="height: 50px;"></td> </tr> <tr> <td style="text-align: center; font-size: small;">What I Want To Know.</td> <td style="height: 50px;"></td> </tr> <tr> <td style="text-align: center; font-size: small;">What I Know about ...</td> <td style="height: 50px;"></td> </tr> </table> <p style="font-size: x-small; margin-top: 5px;">Adapted from: Luciana Tull, "Highlighting My Strengths"</p>	I Have New Questions.		How I Found Out.		What I Found Out.		What I Want To Know.		What I Know about ...		<h3 style="text-align: center; margin: 0;">Science Report</h3> <p style="font-size: small;">Date: _____ Name/s: _____</p> <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <pre> graph TD A([?]) --> B[💡] B --> C{Is it?} C -- No --> B C -- Yes --> D[🔑] D --> E[🔍] E --> F{{Final Expression}} </pre> </div> <div style="flex: 2; padding-left: 10px;"> <p><i>I have a question!</i></p> <p>_____</p> <p><i>Hypothesis</i></p> <p>_____</p> <p><i>Procedure</i></p> <p>_____</p> <p><i>Collect / Organize Data</i></p> <p>_____</p> <p><i>Analyze / Conclude</i></p> <p>_____</p> <p><i>Share Results</i></p> <p>_____</p> </div> </div> <p style="font-size: x-small; margin-top: 5px;">©Copyright 1994, Macro Press</p>
I Have New Questions.											
How I Found Out.											
What I Found Out.											
What I Want To Know.											
What I Know about ...											

How a scientist organizes.

<h3 style="text-align: center; margin: 0;">Venn Diagram - 3</h3> <p style="font-size: small;">Name: _____ Date: _____</p> <div style="text-align: center; margin: 20px 0;"> </div> <p style="font-size: x-small; margin-top: 5px;">©Copyright 1994, Macro Press</p>	<div style="margin-bottom: 20px;"> <p>Glossary</p> <p>Term: _____</p> <p>Illustration:</p> <div style="border: 1px solid black; height: 80px; margin: 5px 0;"></div> <p>Definition:</p> <p>_____</p> </div> <div> <p>Glossary</p> <p>Term: _____</p> <p>Illustration:</p> <div style="border: 1px solid black; height: 80px; margin: 5px 0;"></div> <p>Definition:</p> <p>_____</p> </div> <p style="font-size: x-small; margin-top: 5px;">©Copyright 1994, Macro Press</p>
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The Path To Invention



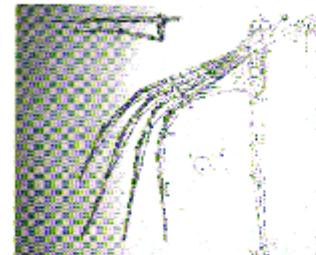
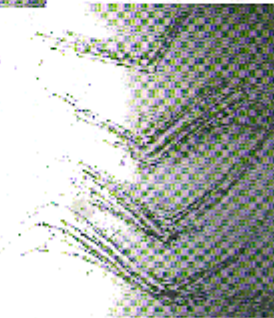
OBSERVATION:
Study the phenomena in detail.



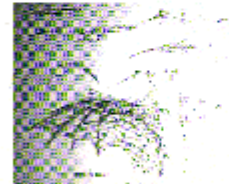
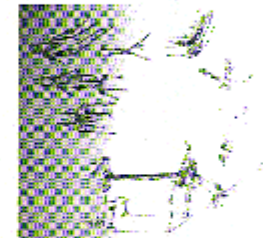
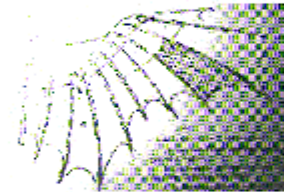
ANALYSIS:
What forces and structures
are acting in phenomena?



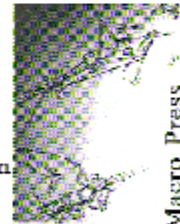
Grade
4
Sample



DESIGN:
Create possible means of duplicating
or improving on observations.



INTEGRATE:
Take the components of the design,
and make them work for you!

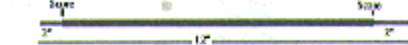


Da Vinci Drawings Courtesy of:
Elmer Belt Library of Vinciana
University of California, Los Angeles

Making Electric Circuits

Preparing The Wire

Use two 18-gauge #18 copper wire. If it is bare wire, ensure that wire is not touching during the circuit connections, or a short will result. If the wire is insulated, strip 2" of insulation from each end.



Strip the wire with a utility knife or by the sandpaper.

Strip the insulation by cutting away bits of it. Rotate the wire, or move the blade around the wire, until the insulation is cut through to the bare wire with a sharp snip. When the snip is to the wire all the way around, the 2" wires will strip off easily.

Battery Holders

Water-tight hold



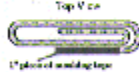
Red Wire
(only post)

Insert end of loose wire into an available terminal. CAUTION: when inserted.

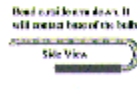
Put end of the battery, or cell, between battery holders. (Other wires hold them away from the battery.)

Bulb Holders

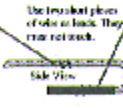
paper clip



Top View

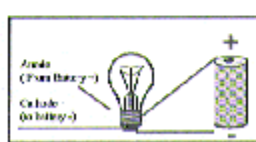


Side View



Side View

12 pieces of welding tape



Super glue into the paper clip. The top section will hold it. The bottom will be the ground wire.

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grade 6

MAKING AND USING A BAROMETER

Barometer picture



MAKE IT

- Stretch the rubber bands over the jar and secure tightly with the rubber bands. (A ridge will show up the bottom slightly to make it more flexible.)
- Trim the end of the straw. Use a pin. Attach the straw to the top of the bellows with a small piece of tape.
- Secure the glass to the base with a loop of string tape.
- Fold the card lengthwise, opening slightly to make it loose, and fix to the base so the inside edge is within a half inch of the straw.

USE IT

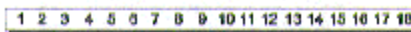
- Record your barometer readings at home, outdoors each day, morning and evening.
- Check weather reports daily.
- After recording barometer readings and checking your barometer for two weeks, compare your barometer readings to the weather reports. How do they compare? When do they differ? How do they differ?
- Keep track of the weather for one week.
- After two weeks, what conditions do you have for clearing up next day?

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grade 6

How to do and document.

grade 5



Parallax Play

- Draw lines.
- Place a small piece of tape in the middle of the square hole of "A".
- Stick a hole punch in the center of the tape.
- Place your paper over the tape of your desk.
- Trace lines.
- Place your card on the card stock at the bottom of the page.
- Close your left eye.
- Look at the card stock at the top of the page with your right eye.
- Write the number you see on the card stock at the top of the page.
- Close your right eye and look with your left.
- Repeat steps 7 and 8 for your left eye.
- Repeat steps 7 through 11 for lines 1 through 10.



Position A
Left eye viewing
Right eye viewing



Position B
Left eye viewing
Right eye viewing



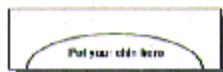
Position C
Left eye viewing
Right eye viewing



Position D
Left eye viewing
Right eye viewing

From one window you can see the card stock at the top of the page. From every position, the card stock will be in the center of the window.

If the card stock is not in the center of the window, the card stock is not in the center of the window.



Put your slide here

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grade 3

Supplement Report #11

Upsetting The Balance

Cause

State factors. Be sure to back up your information.

Effect

Predict possible outcomes, and effects.

Plan

Describe your plan and your information.

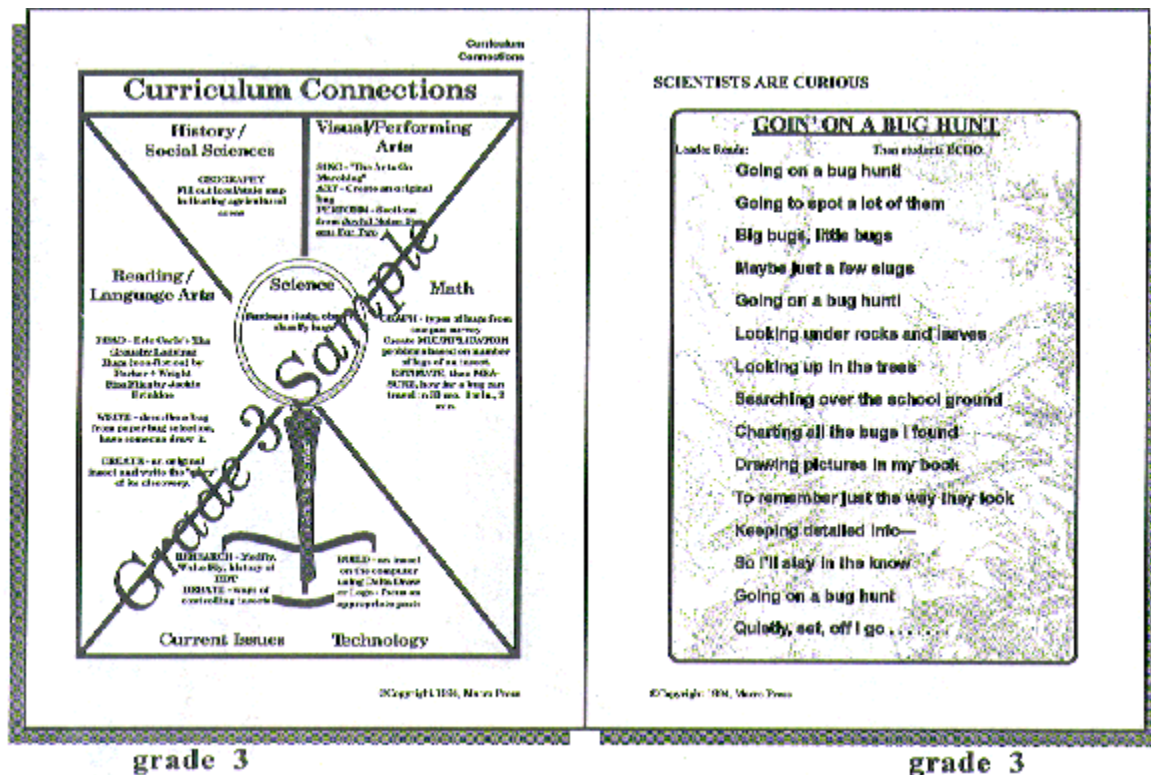
Implementation

Describe how you plan to begin.

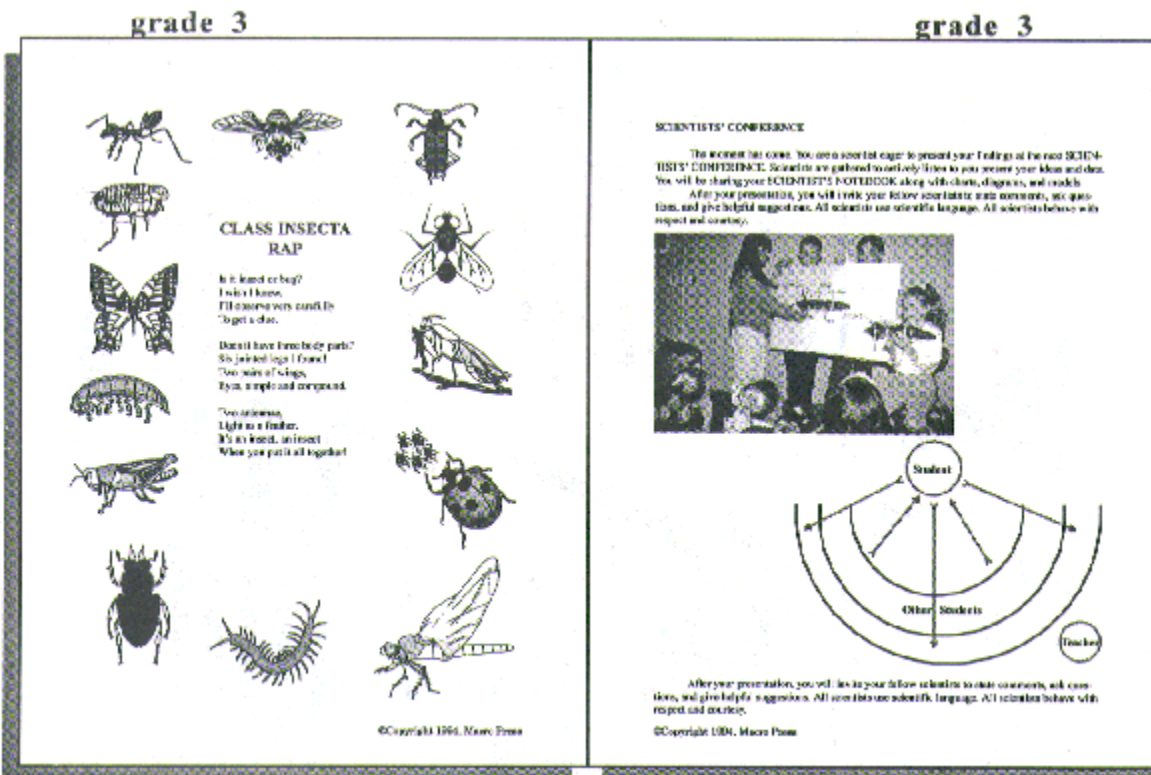
Team Members:

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Integrated curriculum is fun.



The Desert That We Know



These are the grasses,
The desert grasses,
That grow in the desert
That we know.

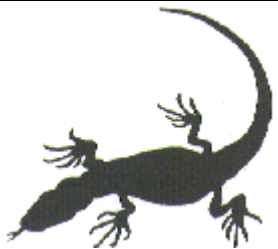


This is the rattlesnake,
The sidewinder rattlesnake,
Who swallows the lizard,
The fringe-toed lizard,
Who eats the grasshopper,
The lubber grasshopper,
Who nibbles the grasses,
The desert grasses,
That grow in the desert
That we know.

This is the grasshopper,
The lubber grasshopper,
Who nibbles in the grasses,
The desert grasses,
That grow in the desert
That we know.



This is the roadrunner,
The fast moving roadrunner,
Who feeds on the rattlesnake,
The sidewinder rattlesnake,
Who swallows the lizard,
The fringe-toed lizard,
Who eats the grasshopper,
The lubber grasshopper,
Who nibbles the grasses,
The desert grasses,
That grow in the desert
That we know.



This is the lizard,
The fringe-toed lizard,
Who eats the grasshopper,
The lubber grasshopper,
Who nibbles the grasses,
The desert grasses,
That grow in the desert
That we know.



This is the vulture,
The turkey vulture,
Who is the scavenger
Of the desert.
It feeds on the animals,
The dead, dead animals,
That lived in the desert
That we know.

[illegible]

Do the children like following a song plan? **Test Your Power As A Leader!** The children like to sing, it is a huge credit. Have a consistent rule that everyone will be the leader in the future by creating the circle. Choose a child to be the leader who sings in the center of the circle. The children choose a tool from the container and leads the group in creating the circle. When the children choose a new leader and the game continues. Have the children make up additional words to go with all the tools provided. Add verses in addition to examples of the lyrics such as a driving band or a better one. These may be represented by pictures or simply making hand. Have the children vote according to the direction based on how they sing the following song to the tune of "Old MacDonald":

All children standing in a large circle. Teacher covers to corner, chooses a crowbar, red or black from the container and pronounces rhyme, as a literary object.

The children in the circle pick up imaginary crocheters and pass around the wheel along with the leader.

Leader chooses a child to take brother's place, a class member is taken from the choir and the leader pronounces pulling a nail out of a piece of wood.

The children in the circle pick up
unplanned class transitions and prompts,
using the wisdom along with the leader.

Leader theorem a child's role (father plays a tool such as a ratchet) is taken from the container, and the leader participates paying up the tool such as the lid of a paint can.




The children in the circle pick up an imaginary tool and pretend the action along with the teacher.



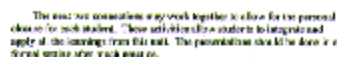
grade 1

grade 2

Make a Dime Plinko! This 1, "How Many Pennies?" Divide a column paper into six rows. On each row draw a different number of circles with five pennies each. Then have children figure how many pennies each row of dimes has. You can use this to practice counting by 5s and to practice multiplying by 5. For example with five dimes, have the student count "Five, ten, fifteen, twenty, twenty-five" and then think of the real plinko square that fits the five dimes. "5 x 5."

HOW MANY PETALS? # of	
	25
	20
	5

vegetables like these seeds that are fairly easy to get out. Fresh seed vegetable seeds are often eaten, orange, apple, bell pepper, hot pepper, pumpkin, and tomatoes are good sources of seeds. While the names of the samples you have listed are in the boxes, have the students determine how many seeds each vegetable has. Each seed is a tiny embryo and it is this problem area that the appropriate answer. Once the students have completed, you can make the range from the boxes, and then to the highest number of seeds that are in each fruit and vegetable. Then give each fruit and vegetable a seed count. This is a good time to have the students report their work. The teacher can then ask the students to make a list of the seeds that are in the seeds. The teacher can then ask the students to make a list of the seeds that are in the seeds. The teacher can then ask the students to make a list of the seeds that are in the seeds.

[illegible]

Another choice for the writing process might be poetry writing from a frame.

2. Using the following stems, students may substitute a new fiscal and/or social and their own rights, mores, norms, etc.

Let the _____
 with and for.
 Come with the living
 feast with me.

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